

REMARKS

Applicant thanks the Examiner for the thorough examination of the application. In particular, Applicant thanks the Examiner for duly considering the Appeal Brief filed May 19, 2003, for withdrawing the rejection under 35 U.S.C. §103(a) over Mashino (U.S. Patent No. 5,886,759) in view of Taniguchi (U.S. Patent 6,099,134), and for reopening examination on the merits.

Status of the Claims

Claims 1-10 are pending in the application and stand rejected.

Rejection Under 35 U.S.C. § 102(e) Over Nagakubo

Claims 1-5, 7, 9 and 10 are rejected under 35 U.S.C. § 102(e) as being anticipated by Nagakubo (U.S. Patent 6,219,117 B1). Applicant traverses.

The Present Invention and its Advantages

The present invention pertains to a back light for a liquid crystal device that utilizes a novel reflector that includes

colorless ink containing a light scattering agent. As embodied in independent claim 1, the invention sets forth:

1. A back light device for use in a liquid crystal display device, comprising:
at least one lamp;
a light guide plate for guiding light emitting from the lamp;
a diffusing sheet for diffusing light emitting from the light guide plate;
at least one prism sheet located on the diffusing sheet, concentrating light;
a protecting sheet located on the prism sheet;
a reflector located under the light guide plate, reflecting light directing downward the light guide plate, wherein at least one of an edge portion of the diffusing sheet adjacent to the lamp, an edge portion of the protecting sheet adjacent to the lamp, or the reflector includes a printing portion made of colorless ink containing a light scattering agent.

Similarly, independent claim 3 contains the limitation: "the reflector includes a printing portion made of colorless ink containing a light scattering agent."

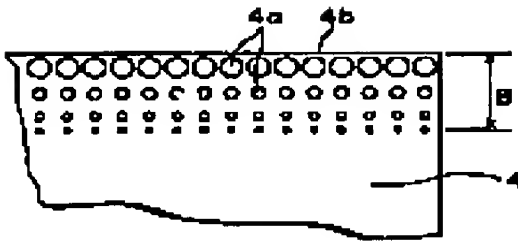
That is, independent claims 1 and 3 of the invention recites "colorless ink containing a light scattering agent." (Emphasis added) One having ordinary skill would realize that the invention utilizes organic or inorganic fine particles as the light scattering agent. The inorganic fine particles can typically be glass beads, silica, talc, titanium oxide, barium sulfate, aluminum

oxide, aluminum hydroxide, calcium carbonate, quartz, etc. An organic material usable as a light scattering agent can be cross-linked polymer fine particles. This novel construction prevents a bright line from forming and additionally has no decrease of brightness.

Distinctions of the Invention over Nagakubo

Nagakubo pertains to a liquid crystal display device. Figure 1 of Nagakubo shows a liquid crystal display device having a protection/diffusion sheet disposed on a liquid crystal panel 1, lens sheets 3, a diffusion plate 4, a light transmission member 5 and a reflection sheet 6. Fig 3 of Nagakubo, reproduced below, shows the diffusion plate 4 having a light quantity control portion 4a on the end side 4b.

FIG. 3



Nagakubo utterly fails to disclose or suggest "a printing portion made of colorless ink containing a light scattering agent." See claims 1 and 3 of the invention. The Examiner, however, asserts that Nagakubo at column 7, lines 22-47, anticipates this limitation.

Nagakubo at column 7, lines 22-34, does have the following disclosure:

As shown in FIG. 3, since the diffusion plate 4 has the light quantity control portion 4a formed on the one surface thereof which is not subjected to the glaring prevention on the end 4b side located near to the backlight source 8, the light quantity control portion 4a being formed by print or the like to a dot pattern which is **composed of a white material having a light**

transmitting property to a certain extent, a part of the light from the backlight source 8 passes through the light quantity control portion 4a and emerges to the lens sheets 3 on the light quantity control portion 4a and the remaining light reflects at the light quantity control portion 4a and makes irregular reflection in the light transmission member 5. (emphasis added)

Nagakubo, that is, discloses a translucent white material that can transmit light to a certain extent. This technology is fundamentally different from claims 1 and 3 of the invention's "printing portion made of colorless ink containing a light scattering agent."

The Examiner nonetheless asserts at page 3, lines 16-18 of the Office Action that Nagakubo discloses "an edge portion of the diffusing sheet adjacent to the lamp includes a printing portion 4a made of colorless ink (white material) containing a light scattering agent (col. 7, lines 22-47)." (Emphasis added) By this, the Examiner equates the fundamentally different concepts of "white" and "colorless."

Webster's II New Riverside University Dictionary (1984 by Houghton Mifflin Co.) defines "white," in part, as "An achromatic color of maximum lightness, the complement of antagonist of black, the other extreme of the neutral gray series." Also, "whiter" and

"whitest" are defined as "of the color white" or "approaching the color white." (emphases added).

Therefore, a "colorless ink" is not the same as a "white material," as has been posited by the Examiner. Nagakubo, as a result, fails to anticipate or suggest the invention as set forth in independent claims 1 and 3. Claims dependent upon claims 1 and 3 are patentable for at least the above reasons.

This rejection is accordingly overcome and withdrawal thereof is respectfully requested.

Rejection Under 35 U.S.C. §103(a) Over Nagakubo in view of Mashino

Claims 6 and 8 are rejected under 35 U.S.C. §103(a) as being obvious over Nagakubo (as applied to claims 1-5, 7, 9 and 10) in view of Mashino (U.S. Patent 5,886,759). Applicant traverses.

Nagakubo has been discussed above. Nagakubo fails to disclose or suggest claims 1 and 3 of the invention's "printing portion made of colorless ink containing a light scattering agent."

The Examiner turns to Mashino for teachings pertaining to a light guide plate having a multiplicity of light diffusion dots. Mashino, however, fails to address the deficiencies of Nagakubo in

disclosing or suggesting "a printing portion made of colorless ink containing a light scattering agent." The combination of Mashino with Nagakubo, as a result, would fail to motivate a person having ordinary skill to produce the invention as embodied in claim 6 or claim 8. A *prima facie* case of obviousness has thus not been made over the combination of Mashino with Nagakubo.

This rejection is accordingly overcome and withdrawal thereof is respectfully requested.

Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert E. Goozner, Reg. No. 42,593, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

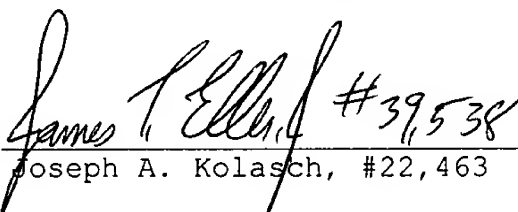
Appl. No. 09/741,045
Reply dated October 31, 2003
Reply to Office Action of July 31, 2003

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,


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